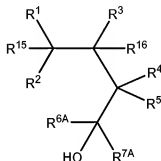


# LISTING OF THE CLAIMS

1-14 (Cancelled).

15. (Original) A fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester having the structure of formula (V)

(V)



wherein:

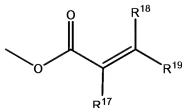
R<sup>1</sup> is selected from hydrogen, C<sub>1</sub>-C<sub>24</sub> alkyl, substituted C<sub>1</sub>-C<sub>24</sub> alkyl, C<sub>1</sub>-C<sub>24</sub> alkoxy, and substituted C<sub>1</sub>-C<sub>24</sub> alkoxy;

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> are independently selected from hydrogen, C<sub>1</sub>-C<sub>24</sub> alkyl, and substituted C<sub>1</sub>-C<sub>24</sub> alkyl, and further wherein any two of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> may be taken together to form a ring;

R<sup>6A</sup> is selected from hydrogen, C<sub>1</sub>-C<sub>24</sub> alkyl, substituted C<sub>1</sub>-C<sub>24</sub> alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C<sub>1</sub>-C<sub>24</sub> alkyl, substituted C<sub>1</sub>-C<sub>24</sub> alkyl, amino, C<sub>1</sub>-C<sub>24</sub> alkylamino, or di(C<sub>1</sub>-C<sub>24</sub> alkyl)amino;

R<sup>7A</sup> is C<sub>1</sub>-C<sub>24</sub> alkyl or substituted C<sub>1</sub>-C<sub>24</sub> alkyl, and further wherein R<sup>6A</sup> and R<sup>7A</sup> may be taken together to form a ring, with the proviso that at least one of R<sup>6A</sup> and R<sup>7A</sup> is fluorinated; and one of R<sup>15</sup> and R<sup>16</sup> is hydrogen, and the other has the structure of formula (VI)

(VI)



in which  $R^{17}$  is selected from hydrogen, fluoro,  $C_1$ - $C_4$  alkyl, fluorinated  $C_1$ - $C_4$  alkyl,  $-CH_2-COOH$ ,  $-CF_2-COOH$ ,  $-CH_2-COOR^{20}$ , and  $-CF_2-COOR^{20}$ ,  $R^{18}$  is hydrogen or fluoro,  $R^{19}$  is hydrogen, fluoro, or  $-COOH$ , and  $R^{20}$  is a nonhydrogen substituent.

16. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 15, wherein:

$R^1$  is selected from hydrogen,  $C_1$ - $C_{12}$  alkyl,  $C_1$ - $C_{12}$  hydroxyalkyl, fluorinated  $C_1$ - $C_{12}$  alkyl, fluorinated  $C_1$ - $C_{12}$  hydroxyalkyl, fluorinated  $C_1$ - $C_{12}$  alkyl substituted with a protected hydroxyl group, and  $C_1$ - $C_{12}$  alkoxy;

$R^2$  is selected from hydrogen,  $C_1$ - $C_{12}$  alkyl and substituted  $C_1$ - $C_{12}$  alkyl;

$R^3$ ,  $R^4$ , and  $R^5$  are independently selected from hydrogen,  $C_1$ - $C_{12}$  alkyl,  $C_1$ - $C_{12}$  hydroxyalkyl, fluorinated  $C_1$ - $C_{12}$  alkyl, fluorinated  $C_1$ - $C_{12}$  hydroxyalkyl, and fluorinated  $C_1$ - $C_{12}$  alkyl substituted with a protected hydroxyl group, and further wherein any two of  $R^1$ ,  $R^3$ ,  $R^4$ , and  $R^5$  may be taken together to form a  $C_3$ - $C_{30}$  alicyclic group;

$R^{6A}$  is selected from hydrogen,  $C_1$ - $C_{12}$  alkyl, and  $C_1$ - $C_{12}$  haloalkyl;

$R^{7A}$  is  $C_1$ - $C_{12}$  alkyl or  $C_1$ - $C_{12}$  haloalkyl;

$R^{17}$  is selected from hydrogen, fluoro, methyl, trifluoromethyl,  $-CH_2-COOH$ , and  $-CH_2-COOR^{20}$ ;

$R^{18}$  and  $R^{19}$  are independently selected from hydrogen and fluoro; and

$R^{20}$  is selected from  $C_1$ - $C_{12}$  alkyl and substituted  $C_1$ - $C_{12}$  alkyl.

17. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 16, wherein:

$R^1$  is selected from hydrogen,  $C_1$ - $C_8$  alkyl,  $C_1$ - $C_8$  alkoxy, and fluorinated hydroxyalkyl having the structure  $-(L^1)_{n1}-CR^8R^9-OH$  in which  $n1$  is zero or 1,  $L^1$  is  $C_1$ - $C_6$  aliphatic,  $R^8$  is selected from hydrogen,  $C_1$ - $C_8$  alkyl, and fluorinated  $C_1$ - $C_8$  alkyl, and  $R^9$  is fluorinated  $C_1$ - $C_8$  alkyl;

$R^2$  is hydrogen or  $C_1$ - $C_8$  alkyl;

$R^3$ ,  $R^4$ , and  $R^5$  are independently selected from hydrogen,  $C_1$ - $C_8$  alkyl, and fluorinated hydroxyalkyl having the structure  $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$  in which  $n2$  is zero or 1,  $L^2$  is  $C_1$ - $C_6$  aliphatic,  $R^{8A}$  is selected from hydrogen,  $C_1$ - $C_8$  alkyl, and fluorinated  $C_1$ - $C_8$  alkyl, and  $R^{9A}$  is fluorinated  $C_1$ - $C_8$  alkyl, and further wherein any two of  $R^1$ ,  $R^3$ ,  $R^4$ , and  $R^5$  may be taken together to form a  $C_3$ - $C_{18}$  alicyclic group;

$R^{6A}$  is selected from hydrogen,  $C_1$ - $C_8$  alkyl, and fluorinated  $C_1$ - $C_8$  alkyl;

$R^{7A}$  is  $C_1$ - $C_8$  alkyl or fluorinated  $C_1$ - $C_8$  alkyl;

$R^{17}$  is selected from hydrogen and methyl; and

$R^{18}$  and  $R^{19}$  are hydrogen.

18. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 17, wherein:

$R^1$  is selected from hydrogen,  $C_1$ - $C_4$  alkyl,  $C_1$ - $C_4$  alkoxy, and  $-(L^1)_{n1}-CR^8R^9-OH$  in which  $n1$  is zero or 1,  $L^1$  is  $C_1$ - $C_4$  aliphatic,  $R^8$  is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and  $R^9$  is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

$R^2$  is hydrogen or  $C_1$ - $C_4$  alkyl;

$R^3$ ,  $R^4$ , and  $R^5$  are independently selected from hydrogen,  $C_1$ - $C_4$  alkyl, and  $-(L^2)_{n2}-$   
 $CR^{8A}R^{9A}-OH$  in which  $n_2$  is zero or 1,  $L^2$  is  $C_1$ - $C_4$  aliphatic,  $R^{8A}$  is selected from hydrogen,  
methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and  $R^{9A}$  is selected from methyl,  
trifluoromethyl, difluoromethyl, and fluoromethyl, and further wherein any two of  $R^1$ ,  $R^3$ ,  $R^4$ ,  
and  $R^5$  may be taken together to form a  $C_5$ - $C_{14}$  alicyclic group;

$R^{6A}$  is selected from hydrogen,  $C_1$ - $C_4$  alkyl, semi-fluorinated  $C_1$ - $C_4$  alkyl, and  
perfluorinated  $C_1$ - $C_4$  alkyl; and

$R^{7A}$  is selected from  $C_1$ - $C_4$  alkyl, semi-fluorinated  $C_1$ - $C_4$  alkyl, and perfluorinated  $C_1$ - $C_4$   
alkyl.

19. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 17 wherein  $R^2$   
and  $R^3$  are taken together to form a  $C_3$ - $C_{18}$  alicyclic group.

20. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 18, wherein  $R^2$   
and  $R^3$  are taken together to form a  $C_5$ - $C_{14}$  alicyclic group.

21. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 18, wherein  $R^4$   
and  $R^5$  are hydrogen.

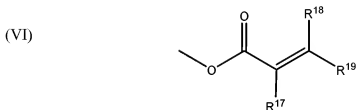
22. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 19, wherein  $R^4$   
and  $R^5$  are hydrogen.

23. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 20, wherein  $R^4$  and  $R^5$  are hydrogen.

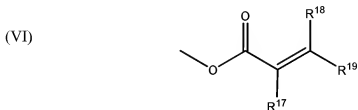
24. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 18, wherein  $R^{6A}$  and  $R^{7A}$  are both trifluoromethyl.

25. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 18, wherein one of  $R^{6A}$  and  $R^{7A}$  is methyl and the other is trifluoromethyl.

26. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 15, wherein  $R^{15}$  is hydrogen and  $R^{16}$  has the structure of formula (VI)



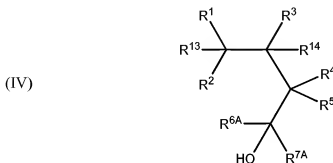
27. (Original) The fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester of claim 15, wherein  $R^{15}$  has the structure of formula (VI)



and  $R^{16}$  is hydrogen.

28-49 (Cancelled).

50. (Original) A method for synthesizing a fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated ester from a fluorinated polyol having the structure of formula (IV)



wherein

R<sup>1</sup> is selected from hydrogen, C<sub>1</sub>-C<sub>24</sub> alkyl, substituted C<sub>1</sub>-C<sub>24</sub> alkyl, C<sub>1</sub>-C<sub>24</sub> alkoxy, and substituted C<sub>1</sub>-C<sub>24</sub> alkoxy,

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> are independently selected from hydrogen, C<sub>1</sub>-C<sub>24</sub> alkyl, and substituted C<sub>1</sub>-C<sub>24</sub> alkyl, and further wherein any two of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> may be taken together to form an alicyclic group,

R<sup>6A</sup> is selected from hydrogen, C<sub>1</sub>-C<sub>24</sub> alkyl, substituted C<sub>1</sub>-C<sub>24</sub> alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C<sub>1</sub>-C<sub>24</sub> alkyl, substituted C<sub>1</sub>-C<sub>24</sub> alkyl, amino, C<sub>1</sub>-C<sub>24</sub> alkylamino, or di(C<sub>1</sub>-C<sub>24</sub> alkyl)amino,

R<sup>7A</sup> is C<sub>1</sub>-C<sub>24</sub> alkyl or substituted C<sub>1</sub>-C<sub>24</sub> alkyl, and further wherein R<sup>6A</sup> and R<sup>7A</sup> may be taken together to form a ring, with the proviso that at least one of R<sup>6A</sup> and R<sup>7A</sup> is fluorinated, and one of R<sup>13</sup> and R<sup>14</sup> is hydroxyl and the other is selected from hydrogen and hydroxyl, the method comprising:

contacting the fluorinated polyol with an acylation reagent selected from acyl chlorides of the formula  $\text{Cl}-(\text{CO})-\text{CR}^{17}=\text{CR}^{18}\text{R}^{19}$  and anhydrides of the formula  $\text{O}[(\text{CO})-\text{CR}^{17}=\text{CR}^{18}\text{R}^{19}]_2$  under reaction conditions effective to result in esterification of a hydroxyl group present at  $\text{R}^{13}$ ,  $\text{R}^{14}$ , or at both  $\text{R}^{13}$  and  $\text{R}^{14}$ , to provide an  $-\text{O}-(\text{CO})-\text{CR}^{17}=\text{CR}^{18}\text{R}^{19}$  substituent, wherein  $\text{R}^{17}$  is selected from hydrogen, fluoro,  $\text{C}_1\text{-C}_4$  alkyl, fluorinated  $\text{C}_1\text{-C}_4$  alkyl,  $-\text{CH}_2\text{-COOH}$ ,  $-\text{CF}_2\text{-COOH}$ ,  $-\text{CH}_2\text{-COOR}^{20}$ , and  $-\text{CF}_2\text{-COOR}^{20}$ ,  $\text{R}^{18}$  is hydrogen or fluoro,  $\text{R}^{19}$  is hydrogen, fluoro, or  $-\text{COOH}$ , and  $\text{R}^{20}$  is a nonhydrogen substituent.

51. (Original) The method of claim 50, wherein prior to admixture of the fluorinated polyol with the acylation reagent, the fluorinated polyol is treated with a deprotonating base.

52. (Original) The method of claim 51, wherein:

$\text{R}^1$  is selected from hydrogen,  $\text{C}_1\text{-C}_4$  alkyl,  $\text{C}_1\text{-C}_4$  alkoxy, and  $-(\text{L}^1)_{n1}-\text{CR}^8\text{R}^9\text{-OH}$  in which  $n1$  is zero or 1,  $\text{L}^1$  is  $\text{C}_1\text{-C}_4$  aliphatic,  $\text{R}^8$  is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and  $\text{R}^9$  is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

$\text{R}^2$  is hydrogen or  $\text{C}_1\text{-C}_4$  alkyl;

$\text{R}^3$ ,  $\text{R}^4$ , and  $\text{R}^5$  are independently selected from hydrogen,  $\text{C}_1\text{-C}_4$  alkyl, and  $-(\text{L}^2)_{n2}-\text{CR}^{8A}\text{R}^{9A}\text{-OH}$  in which  $n2$  is zero or 1,  $\text{L}^2$  is  $\text{C}_1\text{-C}_4$  aliphatic,  $\text{R}^{8A}$  is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and  $\text{R}^{9A}$  is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and further wherein any two of  $\text{R}^1$ ,  $\text{R}^3$ ,  $\text{R}^4$ , and  $\text{R}^5$  may be taken together to form a  $\text{C}_5\text{-C}_{12}$  alicyclic group;

$R^{6A}$  is selected from hydrogen,  $C_1$ - $C_4$  alkyl, semi-fluorinated  $C_1$ - $C_4$  alkyl, and perfluorinated  $C_1$ - $C_4$  alkyl; and

$R^{7A}$  is selected from  $C_1$ - $C_4$  alkyl, semi-fluorinated  $C_1$ - $C_4$  alkyl, and perfluorinated  $C_1$ - $C_4$  alkyl.

53. (Original) The method of claim 51, wherein the acylation reagent is an acyl chloride of the formula  $Cl-(CO)-CR^{17}=CR^{18}R^{19}$ .

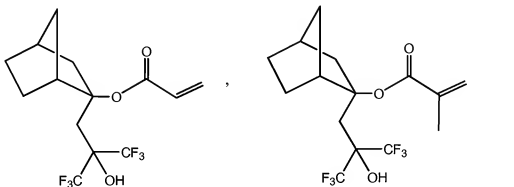
54. (Original) The method of claim 53, wherein  $R^{17}$  is selected from hydrogen, fluoro, methyl, trifluoromethyl,  $-CH_2-COOH$ , and  $-CH_2-COOR^{20}$ ,  $R^{18}$  and  $R^{19}$  are independently selected from hydrogen and fluoro, and  $R^{20}$  is selected from  $C_1$ - $C_{12}$  alkyl and substituted  $C_1$ - $C_{12}$  alkyl.

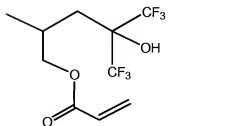
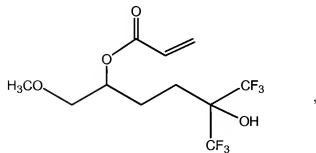
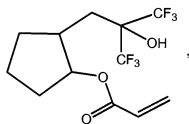
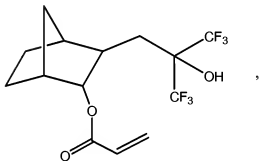
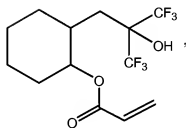
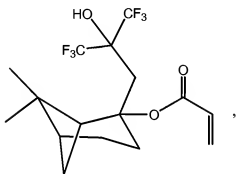
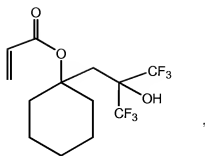
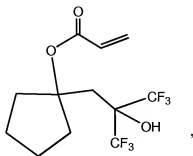
55. (Original) The method of claim 51, wherein the acylation reagent is an anhydride of the formula  $O[(CO)-CR^{17}=CR^{18}R^{19}]_2$ .

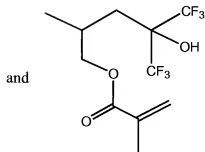
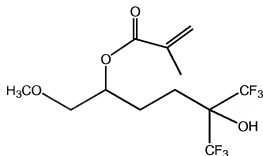
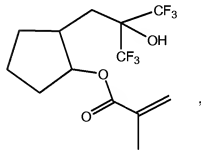
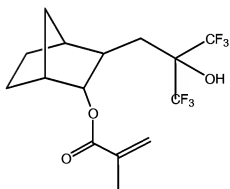
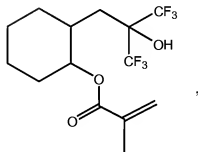
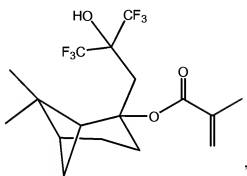
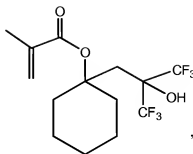
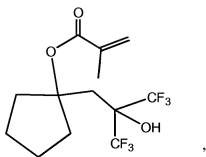
56. (Original) The method of claim 55, wherein  $R^{17}$  is selected from hydrogen, fluoro, methyl, trifluoromethyl,  $-CH_2-COOH$ , and  $-CH_2-COOR^{20}$ ,  $R^{18}$  and  $R^{19}$  are independently selected from hydrogen and fluoro, and  $R^{20}$  is selected from  $C_1$ - $C_{12}$  alkyl and substituted  $C_1$ - $C_{12}$  alkyl.

57-70 (Cancelled).

71. (Original) A fluoroalkanol-substituted  $\alpha,\beta$ -unsaturated esters selected from the group consisting of







and

72-74 (Cancelled).